

Amendments to the Claims

Claim 1 (Currently amended): A method of producing a heterologous protein in fungi comprising:
providing a recipient fungi cell wherein ~~the quality control mechanism~~ the expression of PMT 2 is inhibited in said cell ~~is modified~~ so that incompletely folded heterologous proteins are not degraded in the endoplasmic reticulum and wherein said inhibition enhances folding and assembly of said heterologous proteins; and
introducing to said recipient fungi cell a polynucleotide expression construct.

Claim 2 (Original): The method of claim 1 wherein said fungi cell is a yeast cell.

Claim 3 (Original): The method of claim 1 wherein said introducing is by a transformation method selected from the group consisting of: PEG, electroporation, particle bombardment, and LiAc.

Claim 4 (Original): The method of claim 3 wherein said transformation method is LiAc mediated transformation.

Claim 5 (Original): The method of claim 1 wherein said polynucleotide construct is within a yeast based plasmid.

Claim 6 (Original): The method of claim 1 wherein said recipient cell is modified so that O-glycosylation is inhibited.

Claims 7-12 (Cancelled)

Claim 13 (Withdrawn): A yeast cell transformed by the method of claim 1.

Claim 14 (Withdrawn): A protein produced by the method of claim 1.

Claim 15 (Currently amended): A method of producing a heterologous protein in a fungi cell comprising:

providing a recipient fungi cell that has been modified by inhibiting expression of PMT 2 wherein O-glycosylation is inhibited so that misfolded heterologous proteins are not degraded and wherein said modification enhances folding and assembly of said heterologous proteins; and

introducing to said recipient fungi cell a polynucleotide expression construct, said construct comprising a ~~structural gene to be~~ DNA sequence capable of being expressed in said cell, said gene operably linked to control sequences for expression in a fungi cell wherein said recipient fungi cell.

Claim 16 (Original): The method of claim 15 wherein said fungi cell is a yeast cell.

Claim 17 (Original): The method of claim 15 wherein said introducing is by a transformation method selected from the group consisting of: PEG, electroporation, particle bombardment, and LiAc.

Claim 18 (Original): The method of claim 17 wherein said transformation method is LiAc mediated transformation.

Claim 19 (Original): The method of claim 15 wherein said polynucleotide construct is within a yeast based plasmid.

Claim 20 (Currently amended): The method of claim 15 wherein said recipient cell is modified so that O-glycosylation comprises a protein mannosyltransferase gene the expression of ~~which~~ is inhibited.

Claims 21-23 (Cancelled)

Claim 24 (Withdrawn): A yeast cell transformed by the method of claim 15.

Claim 25 (Withdrawn): A protein produced by the method of claim 15.

Claim 26 (Currently amended): A method of producing a heterologous protein in fungi comprising:

providing a recipient fungi cell wherein Bypass of Sec Thirteen expression is inhibited so that misfolded heterologous proteins are not degraded; and

introducing to said recipient fungi cell a polynucleotide expression construct, said construct comprising a ~~structural gene to be~~ DNA sequence capable of being expressed in said cell, said gene operably linked to control sequences for expression in a fungi cell ~~wherein said recipient fungi cell.~~

Claim 27 (Currently amended): The method of claim ~~426~~ wherein said fungi cell is a yeast cell.

Claim 28 (Currently amended): The method of claim ~~426~~ wherein said introducing is by a transformation method selected from the group consisting of: PEG, electroporation, particle bombardment, and LiAc.

Claim 29 (Original): The method of claim 28 wherein said transformation method is LiAc mediated transformation.

Claim 30 (Currently amended): The method of claim ~~28-26~~ wherein said polynucleotide construct is within a yeast based plasmid.

Claim 31 (Currently amended): The method of claim 28~~26~~ wherein said Bypass of Sec Thirteen gene is BST1.

Claim 32 (Withdrawn): A yeast cell transformed by the method of claim 28.

Claim 33 (Withdrawn): A protein produced by the method of claim 28.

Claim 34 (Withdrawn): A polynucleotide useful for transforming yeast cells comprising:
a promoter capable of driving expression in a yeast cell
a bacterial replicon for propagation in E. Coli,
a transcription termination signal;
a yeast BiP signal sequence;
a yeast origin and centromere for replication and mitotic stability, wherein said polynucleotide directs expression of the recombinant protein to the SRP pathway.

Claim 35 (Withdrawn): The polynucleotide of claim 34 further comprising a 6-histidine tag to facilitate protein purification.

Claim 36 (Withdrawn): The polynucleotide of claim 34 wherein the vector is as depicted in Figure 14.

Claim 37 (Withdrawn): A yeast cell for production of heterologous proteins, said cell comprising a modification so that a quality control mechanism in said cell is modified so that misfolded heterologous proteins are not degraded in the endoplasmic reticulum.

Claim 38 (Withdrawn): The yeast cell of claim 37 wherein said modification comprises a modification that inhibits of O-linked glycosylation.

Claim 39 (Withdrawn): The yeast cell of claim 38 wherein said modification is a PMT loss of function modification.

Claim 40 (Withdrawn): The yeast cell of claim 39 wherein said PMT modification is to PMT 1.

Claim 41 (Withdrawn): The yeast cell of claim 41 wherein said PMT modification is to PMT 2

Claim 42 (Withdrawn): The yeast strain of claim 37 wherein said modification comprises a modification that inhibits the production of Bypass of Sec Thirteen.

Claim 43 (New): A method of producing a heterologous protein in fungi comprising: providing a recipient fungi cell possessing a modification of a double disruption of expression of a PMT 1 gene and a PMT 2 gene, so that misfolded heterologous proteins are not degraded, and wherein said modification enhances proper folding and assembly of said heterologous proteins; and introducing to said recipient fungi cell a polynucleotide expression construct.

Claim 44 (New): The method of claim 43 wherein said fungi cell is a yeast cell.

Claim 45 (New): The method of claim 43 wherein said introducing is by a transformation method selected from the group consisting of: PEG, electroporation, particle bombardment, and LiAc.

Claim 46 (New): The method of claim 45 wherein said transformation method is within LiAc mediated transformation.

Claim 47 (New): The method of claim 43 wherein said polynucleotide construct is within a yeast based plasmid.